

# MISSOURI MONTHLY VITAL STATISTICS

## *Provisional Statistics*

*From The*



MISSOURI DEPARTMENT OF HEALTH & SENIOR SERVICES  
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Jefferson City, Missouri 65102-0570

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### ***Focus. . .*** Missouri SIDS Deaths 1990-2000

During the 1990's the Missouri rate for Sudden Infant Death Syndrome (SIDS) dropped by nearly half (48.8 percent) from 1.7 per 1,000 live births in 1990-1992 to 0.9 in 1998-2000. (See Graph 1) Nationally, the SIDS rate dropped by the same percentage from 1.3 in 1991 to 0.7 in 1999. However, SIDS continues to be the leading cause of death for postneonatal (1-11 months of age) deaths, accounting for approximately one-third of these deaths.

The primary reason for the SIDS decrease is believed to be the success of the "Back to Sleep" campaign<sup>(1)</sup>. In June 1992, the American Academy of Pediatrics issued a recommendation that healthy infants be placed to sleep in a supine or lateral (back or side down) position in order to reduce the risk of SIDS. The precise mechanism for this increased SIDS risk with prone sleep position is unknown. In 1994, a national public education campaign entitled "Back to Sleep" began. It was sponsored by the US Public Health Service, American Academy of Pediatrics, SIDS Alliance and Association of SIDS and Infant Mortality Programs. As a result, the percentage of infants under eight months of age sleeping in the prone (face down) position decreased from 70 percent in 1992 to 24 percent in 1996 and 14 percent in 2000<sup>(2)</sup>. Similar decreases occurred in Missouri (66 to 20 to 13 percent, respectively).

The decrease in Missouri SIDS deaths has continued throughout the decade, but was slightly larger in the first half (33 percent) than in the second half (22 percent) of the decade. This may be reflecting the sharper decrease in prone sleep position in the first half of the decade.

Table 1 shows the risk factors that are most important in predicting SIDS among those that are available from

the birth file for the years 1990-2000 combined. Multiple logistic regression was used to estimate the adjusted relative risks (RR) for each factor after adjusting for birth year and the other variables. The largest single risk factor for the SIDS with a RR of 2.63 for all three periods shown is maternal smoking, meaning that mothers who smoke during pregnancy have 2.63 times the risk of having a SIDS infant than mothers who don't smoke, after adjustment for other available variables. For comparison purposes, Willinger et al<sup>(1)</sup> estimated a relative risk for SIDS of about 2.0 for sleeping in the prone position.

The only other risk factor with a RR greater than 2 was low birth weight at 2.15 for 1990-2000. Other risk factors with RR's greater than 1.5 were 4<sup>th</sup> or higher order births (1.91), males (1.66), 2<sup>nd</sup> or 3<sup>rd</sup> births (1.60), unmarried mothers (1.54), and black mothers (1.52). All of the risk factors were statistically significantly greater than one with the exception of year of birth because of the declining SIDS rates.

Table 2 shows trends in SIDS death rates by these same risk factors shown in Table 1. From the period 1990-1995 to the period 1996-2000, the overall SIDS death rate decreased from 1.42 to 0.97 per 1,000 live births, or 31.5 percent. Generally percentage decreases were less than this for low socio-economic groups and larger for higher socio-economic groups. For example, for those mothers with at least a high school education, SIDS rates dropped 34.6 percent between the two time periods shown, while for those with less than a high school degree, the SIDS death rate decreased 23.1 percent. This may be because the higher educated women were more likely to hear the "Back to Sleep"

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message and use it with their children.

SIDS death rates decreased for all the risk factors shown in Table 2. The smallest decrease between the two periods 1990-1995 and 1996-2000 occurred for black mothers (6.4 percent). According to the national survey<sup>(3)</sup>, in 1998 32 percent of black mothers placed their infants prone to sleep compared to 17 percent for

white mothers. This shows the need to better educate black mothers about this practice.

A decrease in women smoking has also contributed to the SIDS decrease. For the 1996-2000 time period 18.9 percent of mothers smoked during pregnancy compared with 22.4 percent for 1990-1995. Using these percentages, it is estimated that about 13 percent

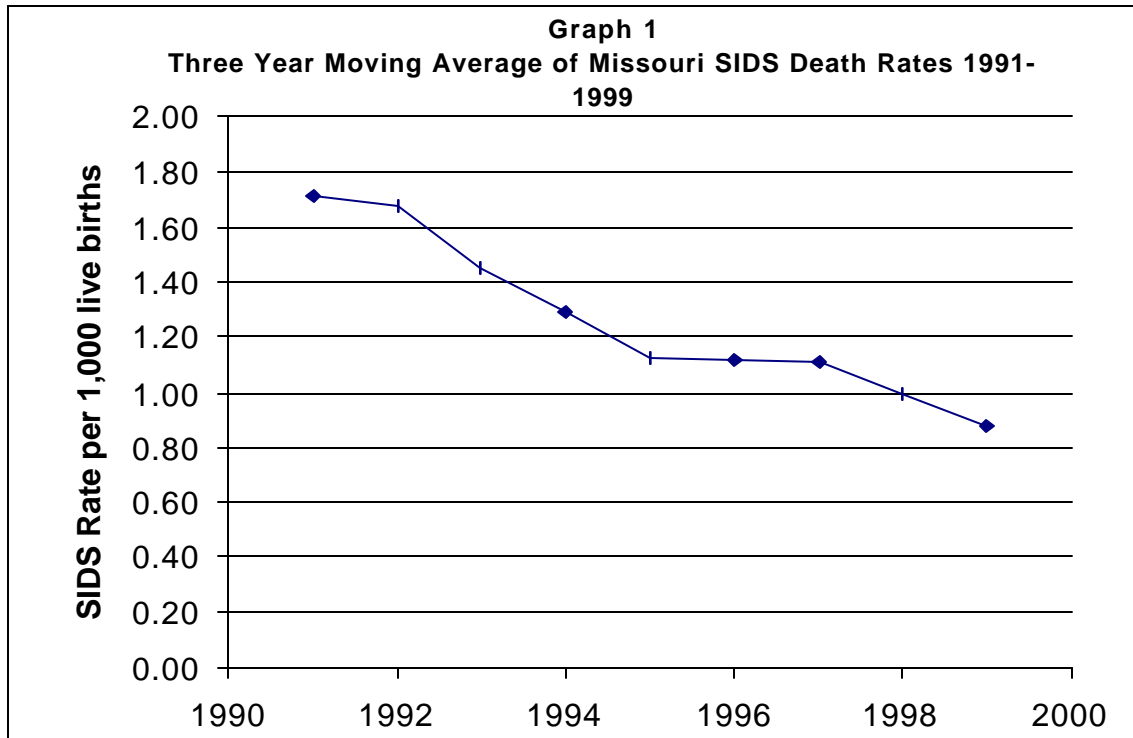


Table 1	
Adjusted Relative Risks of SIDS for Selected Characteristics:Missouri 1990-2000	
	Adjusted Relative Risks 1990-2000
Black	1.52
Low birth weight	2.15
Male	1.66
Maternal Smoking	2.63
Age less than 20	1.44
2nd-3rd birth	1.60
4th+ birth	1.91
Education less than 12	1.43
Late/no prenatal care	1.35
Unmarried mother	1.54
Year of birth	0.93
Relative Risk after adjusting for birth year and all other variables, in comparison to reference group in Table 2	
*Not significantly different from 1.00	

of the SIDS death rate decrease was due to this reduction.

In summary, SIDS deaths have decreased by nearly half in Missouri and nationally during the last decade. The primary reason appears to be the “Back to Sleep” campaign. However, SIDS continues to be the leading cause of death during the postneonatal period. In addition, the Missouri SIDS death rate is somewhat higher than the national rate (0.77 per 1,000 live births in Missouri vs. 0.65 in the US in 1999). Disparities also continue to exist between white and black infants. Additional efforts are needed in reducing the use of prone sleeping, especially among blacks, and reducing prenatal and postnatal exposure to tobacco. Targeting mothers having 2<sup>nd</sup> and higher births and lower education

levels may also be beneficial. Further study is also needed on determining other factors that may be causing SIDS deaths.

#### References:

- <sup>1</sup>. Willinger, M et d. Factors associated with the transition to non-prone sleep position in the United States: The National Sleep Position Study. JAMA 1998, Vol. 280, pp. 329-335 July, 1998
- <sup>2</sup>. Willinger, M. Personal Communication from National Infant Sleep Position Study July, 2001.
- <sup>3</sup>. Willinger, M. et al. Factors associated with caregivers’ choice of infant sleep position, 1994-1998: the National Infant Sleep Position Study, JAMA 2000, Vol. 283, pp. 2135-2142.

	1990-95			1996-2000			Percent Change *
	Births	SIDS	Rate	Births	SIDS	Rate	
Age <20	65126	151	2.32	50804	94	1.85	-20.2
Age 20+	386465	490	1.27	321370	268	0.83	-34.2
Black	75164	176	2.34	55370	121	2.19	-6.7
Non-Black	376527	465	1.23	316804	241	0.76	-38.4
Education <12	91639	255	2.78	71462	153	2.14	-23.1
Education 12 +	359942	386	1.07	300712	209	0.70	-35.2
1st born	212216	219	1.03	174420	153	0.88	-15.0
2nd or 3rd born	222774	362	1.62	184010	188	1.02	-37.1
4th or more	16601	60	3.61	13744	21	1.53	-57.7
Male	230938	415	1.80	190372	217	1.14	-36.6
Female	220640	226	1.02	181798	145	0.80	-22.1
Unmarried	140242	336	2.40	125501	237	1.89	-21.2
Married	310979	304	0.98	246331	125	0.51	-48.1
LBW	31617	112	3.54	27079	73	2.70	-23.9
Non-LBW	419974	529	1.26	345195	289	0.84	-33.5
Smoking	101529	321	3.16	70262	164	2.33	-26.2
Non-smoking	351062	320	0.91	301912	198	0.66	-28.1
Late prenatal care	82624	216	2.61	49079	104	2.12	-18.9
Early prenatal care	368967	425	1.15	323095	258	0.80	-30.7
Total	451591	641	1.42	372174	362	0.97	-31.5

\* Percent change based on exact rates rather than rounded rates in table

## Provisional Vital Statistics for June 2001

**Live births** decreased in June as 5,633 Missouri babies were born compared with 7,610 one year earlier. Cumulative births for the 6- and 12-month periods ending with June also showed decreases.

**Deaths** decreased in June as 3,652 Missourians died compared with 4,241 one year earlier. For January-June, deaths increased slightly while for the 12 months ending with June, deaths decreased slightly.

**The Natural increase** for June was 1,981 (5,633 births minus 3,652 deaths). For the first half of the year the natural increase

dropped from 10,050 to 9,236.

**Marriages** increased slightly in June, the peak month for marriages, but decreased for the cumulative 6- and 12-month periods ending with June.

**Dissolutions of marriage** decreased for all three time periods shown in the table below.

**Infant deaths** decreased in June as 38 Missouri infants died compared with 52 in June 2000. The infant death rate increased for the first half of the year, but remained the same for the 12 months ending with June, 7.7 per 1,000 live births.

### PROVISIONAL VITAL STATISTICS FOR JUNE 2001

Item	June				Jan.-Jun. cumulative				12 months ending with June				
	Number		Rate*		Number		Rate*		Number		Rate*		
	2000	2001	2000	2001	2000	2001	2000	2001	2000	2001	1999	2000	2001
<b>LiveBirths .....</b>	7,610	5,633	17.2	13.0	38,636	37,917	13.9	13.7	77,008	76,130	13.8	13.8	13.6
<b>Deaths .....</b>	4,241	3,652	9.6	8.4	28,586	28,681	10.3	10.4	54,952	54,269	9.9	9.9	9.7
<b>Naturalincrease...</b>	3,369	1,981	7.6	4.6	10,050	9,236	3.6	3.3	22,056	21,861	3.9	4.0	3.9
<b>Marriages .....</b>	5,125	5,266	11.6	12.2	20,471	20,428	7.4	7.4	44,213	43,682	7.9	7.9	7.8
<b>Dissolutions .....</b>	2,298	1,814	5.2	4.2	13,641	12,038	4.9	4.4	25,976	24,861	4.5	4.7	4.4
<b>Infant deaths .....</b>	52	38	6.8	6.7	290	335	7.5	8.8	591	586	7.5	7.7	7.7
<b>Population base ....</b> (in thousands)	...	...	5,595	5,642	...	...	5,595	5,642	...	...	5,523	5,571	5,618

\* Rates for live births, deaths, natural increase, marriages and dissolutions are computed on the number per 1000 estimated population. The infant death rate is based on the number of infant deaths per 1000 live births. Rates are adjusted to account for varying lengths of monthly reporting periods.

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